

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>AFE/JAS/P9095WO</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/GB 03/ 03403</b>	International filing date (day/month/year) <b>06/08/2003</b>	(Earliest) Priority Date (day/month/year) <b>13/08/2002</b>
Applicant <b>AIR PRODUCTS AND CHEMICALS, INC.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

### 1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box I).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 28.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

2

☒ as suggested by the applicant.

☐ None of the figures.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

# INTERNATIONAL SEARCH REPORT

Patent Application No. <b>PCT/GB 03/03403</b>
--

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 7 C1062/00				
According to International Patent Classification (IPC) or to both national classification and IPC				
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) IPC 7 C106				
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched				
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, PAJ				
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>				
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
X	US 4 782 096 A (BANQUY DAVID) 1 November 1988 (1988-11-01)  claims 1,15 column 9, line 61 - line 65 figures 1-5	1,2,5, 18,20, 21,23,30		
X  A	US 4 252 736 A (HAAG WERNER O ET AL) 24 February 1981 (1981-02-24)  claims 1,12	20,31  1,17,19		
X  A	US 5 173 513 A (PINTO ALWYN) 22 December 1992 (1992-12-22)  claim 1 column 12, line 16 - line 21	20  1,5,7-9		
-/--				
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <span style="margin-left: 100px;"><input checked="" type="checkbox"/> Patent family members are listed in annex.</span>				
* Special categories of cited documents :				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top; border: none;">           "A" document defining the general state of the art which is not considered to be of particular relevance            "E" earlier document but published on or after the international filing date            "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)            "O" document referring to an oral disclosure, use, exhibition or other means            "P" document published prior to the international filing date but later than the priority date claimed         </td> <td style="width: 50%; vertical-align: top; border: none;">           "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention            "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone            "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art            "&amp;" document member of the same patent family         </td> </tr> </table>			"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family
"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family			
Date of the actual completion of the international search  <div style="text-align: center; font-weight: bold;">21 November 2003</div>		Date of mailing of the international search report  <div style="text-align: center; font-weight: bold;">28/11/2003</div>		
Name and mailing address of the ISA European Patent Office, P.B. 5816 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax (+31-70) 340-3016		Authorized officer  <div style="text-align: center; font-weight: bold;">De Herdt, O</div>		

# INTERNATIONAL SEARCH REPORT

Application No	PCT/GB 03/03403
----------------	-----------------

## C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
A	<p>US 5 132 007 A (MEYER LEE G ET AL)</p> <p>21 July 1992 (1992-07-21)</p> <p>claim 1</p> <p>column 24, line 45 - line 61</p>	1, 20, 22

# INTERNATIONAL SEARCH REPORT

Information on patent family members



Application No

PCT/GB 03/03403

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4782096	A	01-11-1988	AU 587308 B2	10-08-1989
			AU 6875087 A	20-08-1987
			CA 1263671 A1	05-12-1989
			DE 3780182 D1	13-08-1992
			DE 3780182 T2	18-02-1993
			EP 0233076 A2	19-08-1987
			ES 2033825 T3	01-04-1993
			JP 1801220 C	12-11-1993
			JP 3022856 B	27-03-1991
			JP 62228035 A	06-10-1987
			NZ 219228 A	27-09-1989
			ZA 8700912 A	30-09-1987
US 4252736	A	24-02-1981	AU 530477 B2	14-07-1983
			AU 5879480 A	15-01-1981
			BR 8003409 A	30-12-1980
			CA 1140156 A1	25-01-1983
			DE 3060754 D1	07-10-1982
			EP 0020141 A1	10-12-1980
			NZ 193866 A	14-09-1982
			ZA 8003226 A	27-05-1981
US 5173513	A	22-12-1992	AU 545628 B2	25-07-1985
			AU 7473481 A	11-03-1982
			CA 1231977 A1	26-01-1988
			DE 3161555 D1	05-01-1984
			EP 0047596 A1	17-03-1982
			IN 156903 A1	07-12-1985
			JP 1681701 C	31-07-1992
			JP 3045052 B	09-07-1991
			JP 57122026 A	29-07-1982
			NO 812996 A ,B,	05-03-1982
			ZA 8106171 A	29-09-1982
US 5132007	A	21-07-1992	US 4832831 A	23-05-1989
			US 4938782 A	03-07-1990
			US 4971683 A	20-11-1990
			US 5110452 A	05-05-1992
			US 5198103 A	30-03-1993
			AU 636324 B2	29-04-1993
			AU 4812490 A	26-06-1990
			CA 2003795 A1	29-05-1990
			EP 0485378 A1	20-05-1992
			JP 4502340 T	23-04-1992
			KR 133297 B1	14-04-1998
			WO 9006352 A1	14-06-1990
			US 5021148 A	04-06-1991
			ZA 8909111 A	31-07-1991